

June 20, 2012

Ms. Mary C. Patton, P.E.
Director of Regulatory - NMSD
Range Production Company
100 Throckmorton Street, Suite 1200
Fort Worth, Texas 76102

Re: Implementation Report
First Quarterly Sampling Event – May 2012
Quarterly Residential Well Sampling Project
Parker County, Texas
EarthCon Project No. 212084.00

Dear Ms. Patton:

EarthCon Consultants, Inc. (EarthCon) is pleased to provide Range Production Company (Range) this report documenting implementation of the First Quarterly Sampling Event of the Quarterly Residential Well Sampling Project in Parker County, Texas.

All activities were conducted in accordance with EarthCon's April 25, 2012 *Revised Scope of Work and Cost Estimate (2nd Revision) for Environmental Consulting Services* (approved on April 27, 2012) and the *Final Quarterly Residential Well Sampling Work Plan*, dated May 7, 2012 (May 2012 Work Plan, see **Attachment 1**) submitted electronically to Range on May 8, 2012. This report specifically documents collection of water samples from residential wells and coordination with analytical laboratories; evaluation and interpretation of associated data were handled by other Range consultants, and hence, are not discussed in this report.

1.0 PREPARATORY ACTIVITIES

Upon receiving approval from Range, EarthCon contacted Accutest Laboratories (Accutest) and Milco Safety Rental to coordinate delivery to EarthCon's offices all needed sample containers, shipping materials and sampling equipment; coordination of delivery of sample containers and shipping materials from Isotech Laboratories (Isotech) was conducted through Mr. Alan Kornacki of Weatherford, a Range consultant.

Prior to initiating field activities, on May 9, 2012 EarthCon was provided by Mary Patton of Range a final schedule of visits for all wells/landowners listed in Table 1 of the May 2012 Work Plan that had provided authorization for sampling, except for well WW5 originally listed as owned by Mr. Brent A. Mauldin. As requested by Range, on May 12, 2012 EarthCon visited the Mauldin residence and determined that it had been recently purchased by Michael and Wendy Wells, who agreed to have

their well sampled; this information was communicated the same day via electronic mail to Ms. Patton (see **Attachment 2**).

2.0 FIELD ACTIVITIES

The EarthCon field crews mobilized to the project area on Thursday May 10, 2012, and commenced preparations for sampling, including acquiring sampling materials and calling the landowners to confirm the visits. Sampling occurred from Friday May 11, 2012 through Monday May 14, 2012 (including demobilization), and was performed in general accordance with protocols presented in detail in the May 2012 Work Plan; **Table 1** provides a summary of the samples collected.

The field work was conducted in Level D personal protective equipment (PPE), in accordance with a site-specific Health and Safety Plan (HASP), and after health and safety meetings were conducted at the start of each day. All ambient air readings demonstrated a safe environment with no health or safety concerns. No health or safety incidents occurred during EarthCon's sampling activities.

Well water samples were collected from existing sampling ports (e.g., spigots, tank inlet pipes, etc.) prior to softening or other modification/treatment of the water stream, using typical protocols presented in Appendix A of the May 2012 Work Plan. In a few instances, as noted in **Table 1**, pre-treatment water samples could not be obtained due to the manner in which the well and water treatment infrastructure was constructed (i.e., piping from the wellhead was hard-plumbed to a water treatment/softening tank, or there was no ready access to pre-treated water). In such cases, treated water was collected from existing post-treatment spigots, or samples were collected inside treatment tanks at the inlet. In addition, in the cases of wells WW10, WW18 and WW20, where samples were collected from a tank inlet, the sample for analysis at Isotech could not be obtained from these three locations as there was no room to install a hose so that the laboratory-prescribed sampling protocol could be implemented; further, piping modifications were not contemplated per the May 2012 Work Plan. Additional well water samples were collected for quality control purposes; these samples consisted of: a field duplicate (at WW9); a matrix spike/matrix spike duplicate pair (at WW7); and two trip blanks (one for each shipped cooler containing samples for analysis of volatile constituents).

All samples were labeled, packaged per laboratory instructions, and shipped to Accutest and Isotech via common courier under chain-of-custody documentation. The labels and chain-of-custody forms identified the analyses required for each sample, as established in the May 2012 Work Plan.

Pertinent field observations and measurements were recorded in well-specific field forms; photographs taken at each sampling location. The completed field forms and photographic records are grouped per well and presented in **Attachment 3**.

3.0 LABORATORY COORDINATION

EarthCon confirmed receipt of all samples at Accutest and Isotech; in addition, for samples submitted for analysis at Accutest, the sample receipt forms were reviewed to verify that samples were received in good condition and were correctly logged for the appropriate analyses.

EarthCon's laboratory coordination activities concluded by verifying that all samples were analyzed within holding time and that all analytical results were provided; analytical data packages and summary tables were directly submitted to Range via electronic mail by Accutest, and are included in **Attachment 4** for ease of reference.

4.0 CLOSING

EarthCon appreciates the opportunity to provide environmental consulting services to Range Production Company. Please do not hesitate to contact the undersigned at (281) 240-5200, if you have any questions regarding this report.

Sincerely,



for:

Earl H. Scott
Project Principal



Kathleen Buxton, P.G.
Sr. Geologist



Gabriella P. Floreslovo
Sr. Project Engineer

Enclosures:

Table 1 – Summary of Samples Collected – March 2012

Attachment 1 – Copy of April 2012 Work Plan

Attachment 2 – Message Documenting Verbal Agreement for Sampling WW5

Attachment 3 – Well-Specific Field Forms and Photographic Records

Attachment 4 – Well-Specific Data Packages and Summary Tables (as submitted by Accutest)

Table 1
Quarterly Residential Well Sampling Project
Parker County, Texas
First Quarterly Sampling Event
Summary of Samples Collected - March 2012

#	Water Well Number (WW#)	Property Owner	Sample Collection Date	Water Condition	Sample Field Identification	Accutest Laboratory Data Package #	Comments
1	WW 1	Rodney & Geraldine Wells	5/14/2012	Un-treated	WWW01-WEL-051412	TC8548	
2	WW 2	Michelle Perdue	5/11/2012	Un-treated	WWW02-PER-051112	TC8199	
3	WW 4	Chandra D. Abbott	5/12/2012	Un-treated	WWW04-ABB-051212	TC8546	
4	WW 5	Michael and Wendy Wells	5/12/2012	Un-treated	WWW05-WEL-051212	TC8544	
5	WW 6	Amanda M. Thompson	5/13/2012	Un-treated	WWW06-THO-051312	TC8547	
6	WW 7	Jeff W. Merryman	5/11/2012	Un-treated	WWW07-MER-051112	TC8200	Volume for MS/MSD collected (Accutest)
7	WW 9	John Stites	5/11/2012	Un-treated	WWW09-STI-051112 Dup-051112	TC8198	Duplicate collected (Accutest)
8	WW 10	Devyn Hayley	5/12/2012	Treated	WWW10-HAY-051212	TC8540	Collecetd at tank inlet; therefore, sample for analysis at Isotech cannot be collected
9	WW 11	Harry & Margaret Anderson	5/11/2012	Un-treated	WWW11-AND-051112	TC8202	
10	WW 13	Tom Struths	5/12/2012	Un-treated	WWW13-STR-051212	TC8549	
11	WW 14A	Stephen & Carol Hurst	5/13/2012	Un-treated	WWW14A-HUR-051312	TC8543	
12	WW 15	Stephen & Carol Hurst	5/13/2012	Un-treated	WWW15-HUR-051312	TC8542	
13	WW 18	Thomas & Elizabeth Struths	5/12/2012	Treated	WWW18-STR-051212	TC8539	Collecetd at tank inlet; therefore, sample for analysis at Isotech cannot be collected
14	WW 19	Joseph & Rebecca Williams	5/13/2012	Un-treated	WWW19-WIL-051312	TC8537	
15	WW 20	Dennis Huffman	5/12/2012	Treated	WWW20-HUF-051212	TC8541	Collecetd at tank inlet; therefore, sample for analysis at Isotech cannot be collected
16	WW 21	Kirk & Brenda Van Newkirk	5/13/2012	Treated	WWW21-VAN-051312	TC8538	
17	WW 22	Timothy & Sheryl Simpson	5/12/2012	Un-treated	WWW22-SIM-051212	TC8550	
18	WW 23	David & Gloria Husby	5/11/2012	Un-treated	WWW23-HUS-051112	TC8201	
19	WW 24	Pamela Smith	5/14/2012	Un-treated	WWW24-SMI-051412	TC8551	
20	WW 25	Jeff Mathews	5/12/2012	Un-treated	WWW25-MAT-051212	TC8545	
		Trip Blank	5/11/2012		TRIPBLANK_051112	TC8203	
		Trip Blank	5/12/2012		TRIPBLANK_051212	TC8536	



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, TX

Accutest Job Number: TC8198

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: 27



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8198

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, TX

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8198-1	05/11/12	13:42	05/12/12	AQ	Ground Water	WWW09-STI-051112
TC8198-2	05/11/12	00:00	05/12/12	AQ	Ground Water	DUP-051112

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8198

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 11:56:44 AM

2 Samples were collected on 05/11/2012 and received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. These samples received an Accutest job number of TC8198. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW09-STI-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8198-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07136.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	109%		87-119%
460-00-4	4-Bromofluorobenzene	102%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW09-STI-051112	
Lab Sample ID:	TC8198-1	Date Sampled: 05/11/12
Matrix:	AQ - Ground Water	Date Received: 05/12/12
Method:	RSKSOP-147/175	Percent Solids: n/a
Project:	First Quarterly Well Sampling, Parker County, Texas	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002581.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2	SS002582.D	50	05/21/12	FI	n/a	n/a	GSS131

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	2.44 ^a	0.025	0.015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.463 ^a	0.050	0.025	mg/l	J
74-98-6	Propane	0.186	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.0204	0.0015	0.00075	mg/l	
106-97-8	Butane	0.0387	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8198-2	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07137.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		79-122%
17060-07-0	1,2-Dichloroethane-D4	107%		75-121%
2037-26-5	Toluene-D8	108%		87-119%
460-00-4	4-Bromofluorobenzene	102%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-051112		
Lab Sample ID:	TC8198-2	Date Sampled:	05/11/12
Matrix:	AQ - Ground Water	Date Received:	05/12/12
Method:	RSKSOP-147/175	Percent Solids:	n/a
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002589.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2	SS002590.D	100	05/21/12	FI	n/a	n/a	GSS131

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	3.42 ^a	0.050	0.030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.050 U ^a	0.10	0.050	mg/l	
74-98-6	Propane	0.461	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.0524	0.0015	0.00075	mg/l	
106-97-8	Butane	0.0961	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # TC8198

Client / Reporting Information		Project Information										Requested Analyses										Matrix Codes									
Company Name EarthCon Consultants, Inc.		Project Name: First Quarterly Well Sampling, Parker County, Texas										<div>Requested Analyses</div> <div>Matrix Codes</div> <div>DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank</div>										LAB USE ONLY									
Street Address 4800 Sugar Grove Blvd., Suite 390		Billing Information (if different from Report to)																													
City State Zip Stafford TX 77477		Company Name																													
Project Contact Gabriela Floreslovo		Street Address																													
Phone # Fax # 281-201-3513		City State Zip																													
Sampler(s) Name(s) Kathleen Burton 281-240-5200		Project Manager										Attention:																			
Field ID / Point of Collection		Collection		Date		Time		Sampled By		Matrix		# of bottles		Number of preserved bottles																	
1 WWD-09-STI-051112		051112		1342		KB		W		6		X		BTX 8280B Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175										X							
2 DUP-051112		051112				KB		W		6		X												X							
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions																			
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY		Approved By (Accutest PM): / Date:										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"										<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other									
Emergency & Rush T/A data available via Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary																													
Relinquished by Sampler:		Date/Time:		Received By:		Relinquished By:		Date/Time:		Received By:		Relinquished By:		Date/Time:		Received By:															
3		5/11/12 500		1		2		5/11/12		2		3		5/11/12		2															
5		5/11/12 1030		3		4		5/11/12		4		5		5/11/12		4															
Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		Preserved where applicable		<input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp		5.2/4.7																							

TC8198: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8198 **Client:** EARTHCON CONSULTANTS **Project:** FIRST QUARTERLY WELL SAMPLING
Date / Time Received: 5/12/2012 **Delivery Method:** FedEx **Airbill #'s:** 524976292500
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

<u>Cooler Security</u>	<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Cooler temp verification:	Infrared Gun
3. Cooler media:	Ice (Bag)

<u>Quality Control</u>	<u>Preservatio</u>	<u>Y or N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			<input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>				
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Condition of sample:	Broken / Leaking

<u>Sample Integrity - Instructions</u>	<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments 1 VIAL BROKEN IN LAB FOR SAMPLE "WWW09-STI-051112".
 Trip blank reported in job TC8203.

Accutest Job Number: TC8198**CSR:** Elessa Sommers**Response Date:** 5/15/2012**Response:** Sufficient number of vials remain to perform the requested analysis. Trip blank reported in job TC8203.

4.1

4

TC8198: Chain of Custody**Page 3 of 4**

Sample Receipt Log

Job #: TC8198

Date / Time Received: 5/12/2012

Initials: ians

Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8198-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8198-2	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

TC8198: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8198 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8198			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8198	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8198
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VK328
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8198-1, TC8198-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8198-1, TC8198-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8198-1, TC8198-2

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8198-1, TC8198-2

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8198-1, TC8198-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8198-1, TC8198-2

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8198

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8198-1, TC8198-2

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50		6	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	1.0 U	ND		nc	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8199

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8199

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8199-1	05/11/12	12:50	05/12/12	AQ	Ground Water	WWW02-PER-051112



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8199

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 12:24:15 PM

1 Sample was collected on 05/11/2012 and received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. The sample received an Accutest job number of TC8199. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW02-PER-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8199-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07132.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00036	0.0010	0.00025	mg/l	J
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	109%		87-119%
460-00-4	4-Bromofluorobenzene	105%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW02-PER-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8199-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002583.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2	SS002584.D	50	05/21/12	FI	n/a	n/a	GSS131

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	1.41 ^a	0.025	0.015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.025 U ^a	0.050	0.025	mg/l	
74-98-6	Propane	0.0027	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr. Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # TC8199	
Client / Reporting Information		Project Information	
Company Name EarthCon Consultants, Inc.		Project Name First Quarterly Well Sampling, Parker County, Texas	
Street Address 4800 Sugar Grove Blvd., Suite 390		Street	
City State Zip Stafford TX 77477		City State	
Project Contact Gabriela Floreslovo		Billing Information (if different from Report to) Company Name	
Phone # Fax #		Street Address	
Client Purchase Order #		City State Zip	
Project Manager		Attention:	
Sample(s) Name(s) Phone # Kathleen Buxton 281-240-5200		Collection	
Accutest Sample # Field ID / Point of Collection		Number of preserved Bottles	
1241416 WWWW-PEP-051112		Date Time Sampled By Matrix # of bottles	
051112 1230 KB W 6		X X	
Turnaround Time (Business days)		Data Deliverable Information	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"	
Approved By (Accutest PM): / Date:		<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	
Emergency & Rush T/A data available V/A Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary	
Relinquished by Sampler: / Date Time: 5/11/12 500		Received By: / Date Time: 5/11/12 2	
Relinquished by Sampler: / Date Time: 5/12/12 18		Received By: / Date Time: 5/12/12 4	
Relinquished by: / Date Time:		Received By: / Date Time:	
Custody Seal #		On Ice Cooler Temp. 52/4.7	

TC8199: Chain of Custody

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Accutest Job Number: TC8199 Client: EARTHCON CONSULTANTS Project: FIRST QUARTERLY WELL SAMPLING
 Date / Time Received: 5/12/2012 Delivery Method: FedEx Airbill #'s: 524976292500
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank reported in job TC8203.

Accutest Job Number: TC8199

CSR: Elessa Sommers

Response Date: 5/15/2012

Response: Trip blank reported in job TC8203.

4.1

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TC8199: Chain of Custody

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Sample Receipt Log

Job #: TC8199

Date / Time Received: 5/12/2012

Initials: ians

Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8199-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8199-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8199-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8199-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8199-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8199-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

 4.1
4

TC8199: Chain of Custody

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Appendix A Laboratory Data Package Cover Page

TC8199 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8199			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8199	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8199
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VK328
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8199-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8199-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8199-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8199-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8199-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8199-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8199

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8199-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50	6		30
74-85-1	Ethene	1.0 U	ND	nc		30
74-84-0	Ethane	1.0 U	ND	nc		30
74-98-6	Propane	1.5 U	ND	nc		30
75-28-5	Isobutane	1.5 U	ND	nc		30
106-97-8	Butane	1.5 U	ND	nc		30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8200

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8200

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8200-1	05/11/12	15:20	05/12/12	AQ	Ground Water	WWW07-MER-051112
TC8200-1D	05/11/12	15:20	05/12/12	AQ	Water Dup/MSD	WWW07-MER-051112 MSD
TC8200-1S	05/11/12	15:20	05/12/12	AQ	Water Matrix Spike	WWW07-MER-051112 MS



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8200

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 1:37:01 PM

1 Sample was collected on 05/11/2012 and received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. The sample received an Accutest job number of TC8200. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW07-MER-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8200-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		79-122%
17060-07-0	1,2-Dichloroethane-D4	104%		75-121%
2037-26-5	Toluene-D8	108%		87-119%
460-00-4	4-Bromofluorobenzene	101%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW07-MER-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8200-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.491 a	0.0025	0.0015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0204	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

[illegible]

TC8200: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8200 **Client:** EARTHCON CONSULTANTS **Project:** FIRST QUARTERLY WELL SAMPLING
Date / Time Received: 5/12/2012 **Delivery Method:** FedEx **Airbill #s:** 524976292500
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control	Preservatio	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
3. Samples preserved properly:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		
4. VOCs headspace free:		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Broken / Leaking

Sample Integrity - Instructions	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments 6 VIALS BROKEN IN LAB FOR SAMPLE "WWW07-MER-051112"
 Trip blank reported in job TC8203.

Accutest Job Number: TC8200

CSR: Elessa Sommers

Response Date: 5/15/2012

Response: Sufficient sample volume remains for requested analysis. Trip blank reported in job TC8203.

4.1

4

TC8200: Chain of Custody

Page 3 of 4

Sample Receipt Log

Page 3 of 3

Job #: TC8200

Date / Time Received: 5/12/2012

Initials: IANS

Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8200-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	7	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	8	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	10	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	11	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	13	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	14	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	16	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	17	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8200-1	40ml	18	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

TC8200: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8200 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8200			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8200	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8200
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VK328
ER# ¹	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8200-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8200-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8200-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8200-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8200-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8200-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q	MS ug/l	MS %	Limits
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8200

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8200-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50		6	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	1.0 U	ND		nc	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8201

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8201

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8201-1	05/11/12	11:25	05/12/12	AQ	Ground Water	WWW23-HUS-051112



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8201

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 1:49:46 PM

1 Sample was collected on 05/11/2012 and received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. The sample received an Accutest job number of TC8201. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW23-HUS-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8201-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07133.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	109%		87-119%
460-00-4	4-Bromofluorobenzene	103%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW23-HUS-051112	
Lab Sample ID:	TC8201-1	Date Sampled: 05/11/12
Matrix:	AQ - Ground Water	Date Received: 05/12/12
Method:	RSKSOP-147/175	Percent Solids: n/a
Project:	First Quarterly Well Sampling, Parker County, Texas	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2							

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.00516	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00050 U	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job # TC8201	
Client / Reporting Information		Project Information	
Company Name EarthCon Consultants, Inc.		Project Name First Quarterly Well Sampling, Parker County, Texas	
Street Address 4800 Sugar Grove Blvd., Suite 390		Street	
City State Zip Stafford TX 77477		City State	
Project Contact Gabriela Floreslovo		Billing Information (if different from Report to) Company Name	
Phone # Fax #		Street Address	
E-mail		City State Zip	
Project #		Client Purchase Order #	
Project Manager		Attention:	
Sampler(s) Name(s) Kathleen Buxton 281-240-5200		Collection	
Field ID / Point of Collection 14 K5521P WWS23-HUS-05112		Date Time 05/11/12 1125	
Accutest Sample #		Sampled By Matrix # of bottles KB W 6	
		I/C/I	
		Zn/As/Cd	
		Pb/Cu	
		Ni/Co	
		Fe/Mn	
		NO ₃ -N	
		NH ₄ -N	
		NO ₂ -N	
		H ₂ SO ₄	
		DI Water	
		MECH	
		TSP	
		NaHCO ₃	
		ENCO ₂	
		OTHER	
		BTX 8260B	
		Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175	
		Requested Analyses	
		Matrix Codes	
		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank	
		LAB USE ONLY	
Turnaround Time (Business days)		Data Deliverable Information	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"	
Approved By (Accutest PM): / Date:		<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: KB	Date Time: 5/11/12 500	Received By: BU	Received By: FEDEX
Relinquished by Sampler: KB	Date Time: 5/12/12 1030	Received By: BU	Received By: FEDEX
Relinquished by:	Date Time:	Received By:	Received By:
5		5	4
Custody Seal #		On Ice Cooler Temp.	
<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. 5.2/4.7	

TC8201: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8201 **Client:** EARTHCON CONSULTANTS **Project:** FIRST QUARTERLY WELL SAMPLING
Date / Time Received: 5/12/2012 **Delivery Method:** FedEx **Airbill #s:** 524976292500
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

Cooler Security **Y or N** **Y or N**
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature **Y or N**
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation **Y or N** **N/A** **WTB** **STB**
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation **Y or N**
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition **Y or N**
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions **Y or N** **N/A**
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank reported in job TC8203.

Accutest Job Number: TC8201**CSR:** Elessa Sommers**Response Date:** 5/15/2012**Response:** Trip blank reported in job TC8203.

4.1

4

TC8201: Chain of Custody**Page 3 of 4**

Sample Receipt Log

Page 3 of 3

Job #: TC8201

Date / Time Received: 5/12/2012

Initials: ians

Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8201-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8201-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8201-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8201-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8201-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8201-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

TC8201: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8201 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8201			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8201	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8201
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VK328
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8201-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8201-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8201-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8201-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8201-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8201-1

CAS No.	Compound	TC8200-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8201

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8201-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50	6		30
74-85-1	Ethene	1.0 U	ND	nc		30
74-84-0	Ethane	1.0 U	ND	nc		30
74-98-6	Propane	1.5 U	ND	nc		30
75-28-5	Isobutane	1.5 U	ND	nc		30
106-97-8	Butane	1.5 U	ND	nc		30

6.4.1

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Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8202

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8202

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8202-1	05/11/12	09:45	05/12/12	AQ	Ground Water	WWW11-AND-051112



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8202

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 2:20:53 PM

1 Sample was collected on 05/11/2012 and received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. The sample received an Accutest job number of TC8202. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW11-AND-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8202-1	Date Received:	05/12/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07134.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		79-122%
17060-07-0	1,2-Dichloroethane-D4	106%		75-121%
2037-26-5	Toluene-D8	108%		87-119%
460-00-4	4-Bromofluorobenzene	101%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW11-AND-051112		
Lab Sample ID:	TC8202-1	Date Sampled:	05/11/12
Matrix:	AQ - Ground Water	Date Received:	05/12/12
Method:	RSKSOP-147/175	Percent Solids:	n/a
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002593.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2							

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.00189	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00050 U	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

						10165 Harwin Dr, Ste 150 Houston, TX 77036 TEL: 713-271-4700 FAX: 713-271-4770 www.acctest.com						FED-EX Tracking # _____ Bottle Order Control # _____																																									
						TC8202																																															
Client / Reporting Information						Project Information						Requested Analyses												Matrix Codes																													
Company Name EarthCon Consultants, Inc. Street Address 4800 Sugar Grove Blvd., Suite 390 City State Zip Stafford TX 77477 Project Contact Gabriela Floreslovo Phone # E-mail 281-201-3513 Sampler(s) Name(s) Katherine Buxton 281-240-5000						Project Name: First Quarterly Well Sampling, Parker County, Texas Street Billing Information (if different from Report to) Company Name Street Address City State Zip Attention:						<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> BTX 6200B Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175 </div> <div></div> </div>												Matrix Codes DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank																													
Field ID / Point of Collection S51112						Date 05/11/12						Time 945						Sampled By ICB						Matrix W						# of bottles 6						Collection X						Number of preserved Bottles HCl, NaOH, ZnAcOH, HNO3, H2SO4, NONE, DI Water, MEQH, TSP, NiHSC4, ENCORE, OTHER						LAB USE ONLY					
Turnaround Time (Business days) Standard						Approved By (Accutest PM): / Date: _____						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary						<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other						Comments / Special Instructions _____ _____ _____																													
Relinquished by Sampler: [Signature]						Date/Time: 5/11/12 500						Received By: [Signature]						Date/Time: 5/11/12 1700						Received By: Fedex																													
Relinquished by Sampler: FX						Date/Time: 5/14/12 1030						Received By: [Signature]						Date/Time: _____						Received By: _____																													
Relinquished by: _____						Date/Time: _____						Received By: _____						Date/Time: _____						Received By: _____																													
Custody Seal # _____						<input type="checkbox"/> Intact <input type="checkbox"/> Not intact						<input type="checkbox"/> Preserved where applicable						<input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp. 5.2/4.7																																			

TC8202: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8202 **Client:** EARTHCON CONSULTANTS **Project:** FIRST QUARTERLY WELL SAMPLING
Date / Time Received: 5/12/2012 **Delivery Method:** FedEx **Airbill #'s:** 524976292500
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank reported in job TC8203.

Accutest Job Number: TC8202

CSR: Elessa Sommers

Response Date: 5/15/2012

Response: Trip blank reported in job TC8203.

4.1

4

TC8202: Chain of Custody

Page 3 of 4

Sample Receipt Log

 Job #: TC8202

 Date / Time Received: 5/12/2012

 Initials: ians

 Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8202-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8202-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8202-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8202-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8202-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8202-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

TC8202: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8202 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8202			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8202	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8202
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VK328
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8202-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8202-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8202-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8202-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8202-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8202-1

CAS No.	Compound	TC8200-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8202

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8202-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50	6		30
74-85-1	Ethene	1.0 U	ND	nc		30
74-84-0	Ethane	1.0 U	ND	nc		30
74-98-6	Propane	1.5 U	ND	nc		30
75-28-5	Isobutane	1.5 U	ND	nc		30
106-97-8	Butane	1.5 U	ND	nc		30

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8203

Sampling Date: 05/11/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **19**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8203

First Quarterly Well Sampling, Parker County, Texas
Project No: First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client
	Date	Time By	Received	Code	Type	Sample ID
TC8203-1	05/11/12	09:45	05/12/12	AQ	Trip Blank Water	TRIPBLANK-051112



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8203

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/18/2012 3:01:19 PM

1 Trip Blank was received intact at Accutest on 05/12/2012 and properly preserved in 1 cooler at 4.7 Deg C. The sample received an Accutest job number of TC8203. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VK328

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8200-1MSD were used as the QC samples indicated.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TRIPBLANK-051112	Date Sampled:	05/11/12
Lab Sample ID:	TC8203-1	Date Received:	05/12/12
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K07135.D	1	05/17/12	EM	n/a	n/a	VK328
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		79-122%
17060-07-0	1,2-Dichloroethane-D4	107%		75-121%
2037-26-5	Toluene-D8	110%		87-119%
460-00-4	4-Bromofluorobenzene	104%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

[illegible]

TC8203: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8203 **Client:** EARTHCON CONSULTANTS **Project:** FIRST QUARTERLY WELL SAMPLING
Date / Time Received: 5/12/2012 **Delivery Method:** FedEx **Airbill #'s:** 524976292500
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (5.2/4.7)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☒ ☐ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Tripblank - 051112, Date: 05/11/12, Time: 09:45 listed on chain-of-custody; 3 vials for Trip Blank have Date: 05/04/12, Time: 16:30, 2 vials.

Accutest Job Number: TC8203

CSR: Elessa Sommers

Response Date: 5/15/2012

Response: Chain-of-custody lists the date of the sampling event for the samples associated with the trip blank. The date on the labels on the trip blank is its preparation date.

4.1

4

TC8203: Chain of Custody

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Sample Receipt Log

Page 3 of 3

Job #: TC8203

Date / Time Received: 5/12/2012

Initials: IANS

Client: EARTHCON CONSULTANTS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8203-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7
1	TC8203-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	5.2	-0.5	4.7

 4.1
4

TC8203: Chain of Custody
Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8203 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/18/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/18/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8203			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		VK328			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?				X			
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?						X	
		Were analytical duplicates analyzed at the appropriate frequency?						X	
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		1
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/18/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8203	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		VK328	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSs?	X			
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/18/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8203
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	VK328
ER#	Description		
1	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
2	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL/MDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8203

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-MB	K07127.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8203-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	113% 79-122%
17060-07-0	1,2-Dichloroethane-D4	107% 75-121%
2037-26-5	Toluene-D8	110% 87-119%
460-00-4	4-Bromofluorobenzene	104% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8203

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK328-BS	K07125.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8203-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	23.9	96	76-118
100-41-4	Ethylbenzene	25	25.1	100	75-112
108-88-3	Toluene	25	24.8	99	77-114
1330-20-7	Xylene (total)	75	74.7	100	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	108%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	104%	87-119%
460-00-4	4-Bromofluorobenzene	101%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8203

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	K07129.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1MSD	K07130.D	1	05/17/12	EM	n/a	n/a	VK328
TC8200-1	K07128.D	1	05/17/12	EM	n/a	n/a	VK328

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8203-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	25	25.2	101	24.1	96	4	76-118/16
100-41-4	Ethylbenzene	1.0 U	25	26.3	105	25.3	101	4	75-112/12
108-88-3	Toluene	1.0 U	25	26.5	106	25.3	101	5	77-114/12
1330-20-7	Xylene (total)	3.0 U	75	78.7	105	76.1	101	3	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8200-1	Limits
1868-53-7	Dibromofluoromethane	115%	112%	113%	79-122%
17060-07-0	1,2-Dichloroethane-D4	107%	106%	104%	75-121%
2037-26-5	Toluene-D8	111%	109%	108%	87-119%
460-00-4	4-Bromofluorobenzene	103%	103%	101%	80-133%



05/21/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8536

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **18**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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5.2: Blank Spike Summary 17

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Sample Summary

EarthCon Consultants

Job No: TC8536

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8536-1	05/12/12	09:10	05/15/12	AQ	Trip Blank Water	TRIPBLANK-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8536

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/21/2012 10:36:58 AM

1 Trip Blank was received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8536. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TRIPBLANK-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8536-1	Date Received:	05/15/12
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017786.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		79-122%
17060-07-0	1,2-Dichloroethane-D4	96%		75-121%
2037-26-5	Toluene-D8	94%		87-119%
460-00-4	4-Bromofluorobenzene	101%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.acutest.com

[illegible]

TC8536: Chain of Custody

Page 1 of 3

Accutest Job Number: TC8536 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5; Temp Adjustment Factor: -0.5;
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8);

<u>Cooler Security</u>		<u>Y or N</u>			<u>Y or N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Cooler temp verification:	
3. Cooler media:	Ice (Bag)

<u>Quality Control Preservation</u>	<u>Y or N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Condition of sample:	Intact

<u>Sample Integrity - Instructions</u>	<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>

Comments

Sample Receipt Log

Job #: TC8536

Date / Time Received: 5/15/2012 9:45:00 AM

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8536-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8536-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8536: Chain of Custody
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Appendix A Laboratory Data Package Cover Page

TC8536 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/21/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/21/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8536			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?				X			
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?						X	
		Were analytical duplicates analyzed at the appropriate frequency?						X	
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		1
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/21/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8536	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSs?	X			
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/21/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8536
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	VE812
ER#	Description		
1	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
2	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL/MDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8536

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8536-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8536

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8536-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8536

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8536-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8537

Sampling Date: 05/13/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8537

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8537-1	05/13/12	15:05	05/15/12	AQ	Ground Water	WWW19-WIL-051312



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8537

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 2:46:08 PM

1 Sample was collected on 05/13/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8537. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW19-WIL-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8537-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017767.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		79-122%
17060-07-0	1,2-Dichloroethane-D4	100%		75-121%
2037-26-5	Toluene-D8	99%		87-119%
460-00-4	4-Bromofluorobenzene	95%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW19-WIL-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8537-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002594.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2	SS002595.D	10	05/21/12	FI	n/a	n/a	GSS131

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	1.09 ^a	0.0050	0.0030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0762	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.aaculast.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # TC8537

[illegible]

TC8537: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8537 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

<u>Cooler Security</u>		<u>Y</u>	<u>or</u>	<u>N</u>			<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	<u>Infrared Gun</u>		
3. Cooler media:	<u>Ice (Bag)</u>		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>			
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8537

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

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TC8537: Chain of Custody**Page 3 of 4**

Sample Receipt Log

Page 3 of 3

Job #: TC8537

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8537-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8537-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8537-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8537-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8537-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8537-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8537: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8537 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8537			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8537	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8537
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8537-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8537-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8537-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8537-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8537-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8537-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8537

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8537-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50	6		30
74-85-1	Ethene	1.0 U	ND	nc		30
74-84-0	Ethane	1.0 U	ND	nc		30
74-98-6	Propane	1.5 U	ND	nc		30
75-28-5	Isobutane	1.5 U	ND	nc		30
106-97-8	Butane	1.5 U	ND	nc		30

6.4.1

6



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8538

Sampling Date: 05/13/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8538

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8538-1	05/13/12	13:40	05/15/12	AQ	Ground Water	WWW21-VAN-051312

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8538

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 3:00:28 PM

1 Sample was collected on 05/13/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8538. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS131

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8200-1MS, TC8201-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW21-VAN-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8538-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017768.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		79-122%
17060-07-0	1,2-Dichloroethane-D4	101%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	95%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW21-VAN-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8538-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002596.D	1	05/21/12	FI	n/a	n/a	GSS131
Run #2							

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.0796	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00361	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

Accutest Job Number: TC8538 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8538

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8538: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TC8538

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8538-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8538-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8538-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8538-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8538-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8538-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8538: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8538 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8538			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS131, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8538	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS131, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8538
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS131, VE812
ER# ¹	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8538-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8538-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8538-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-MB	SS002579.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8538-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS131-BS	SS002580.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8538-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	24.2	113	70-130
74-85-1	Ethene	57.4	64.7	113	70-130
74-84-0	Ethane	43.3	46.9	108	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.9	98	70-130
106-97-8	Butane	76.6	71.2	93	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8200-1MS	SS002587.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002585.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8200-1	SS002586.D	5	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8538-1

CAS No.	Compound	TC8200-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	491 ^b	21.5	661	787* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	52.6	92	60-140
74-84-0	Ethane	20.4	43.3	71.6	118	60-140
74-98-6	Propane	1.5 U	60.6	58.2	96	60-140
75-28-5	Isobutane	1.5 U	72.5	66.0	91	60-140
106-97-8	Butane	1.5 U	76.6	64.8	85	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8538

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8201-1DUP	SS002592.D	1	05/21/12	FI	n/a	n/a	GSS131
TC8201-1	SS002591.D	1	05/21/12	FI	n/a	n/a	GSS131

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8538-1

CAS No.	Compound	TC8201-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	5.16	5.50	6		30
74-85-1	Ethene	1.0 U	ND	nc		30
74-84-0	Ethane	1.0 U	ND	nc		30
74-98-6	Propane	1.5 U	ND	nc		30
75-28-5	Isobutane	1.5 U	ND	nc		30
106-97-8	Butane	1.5 U	ND	nc		30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8539

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8539

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8539-1	05/12/12	09:10	05/15/12	AQ	Ground Water	WWW18-STR-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8539

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 3:21:01 PM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8539. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Methane are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW18-STR-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8539-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017769.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		79-122%
17060-07-0	1,2-Dichloroethane-D4	100%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	98%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW18-STR-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8539-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002612.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002613.D	5	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.586 a	0.0025	0.0015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0268	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

Accutest Job Number: TC8539 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

<u>Cooler Security</u>		<u>Y</u>	<u>or</u>	<u>N</u>			<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	Infrared Gun		
3. Cooler media:	Ice (Bag)		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>			
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8539

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1
4**TC8539: Chain of Custody**
Page 3 of 4

Sample Receipt Log

Job #: TC8539

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8539-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8539-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8539-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8539-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8539-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8539-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8539: Chain of Custody

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Appendix A Laboratory Data Package Cover Page

TC8539 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8539			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?						X	1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?						X	3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8539	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8539
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8539-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8539-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8539-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8539-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8539-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8539-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8539

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8539-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8540

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8540

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8540-1	05/12/12	16:40	05/15/12	AQ	Ground Water	WWW10-HAY-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8540

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 4:35:36 PM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8540. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW10-HAY-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8540-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017770.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00049	0.0010	0.00025	mg/l	J
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		79-122%
17060-07-0	1,2-Dichloroethane-D4	99%		75-121%
2037-26-5	Toluene-D8	98%		87-119%
460-00-4	4-Bromofluorobenzene	97%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW10-HAY-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8540-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002614.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002615.D	5	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.486 a	0.0025	0.0015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0938	0.0010	0.00050	mg/l	
74-98-6	Propane	0.0340	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.0033	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00713	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

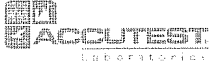
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

TC8540

Client / Reporting Information	Project Information	Requested Analyses	Matrix Codes
Company Name EarthCon Consultants, Inc. Street Address 4800 Sugar Grove Blvd., Suite 390 City State Zip Stafford TX 77477 Project Contact E-mail Gabriela Floreslovo Phone # Fax # 281-201-3513 Sampler(s) Name(s) Kathleen Buxton 281-240-5200	Project Name: First Quarterly Well Sampling, Parker County, Texas Street Billing Information (If different from Report to) Company Name Street Address City State Zip Project # Client Purchase Order # Project Manager Attention:	Requested Analyses BTX BTEX B260B Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175	Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank
Field ID / Point of Collection WW W10-HAY-051212	Date Time Sampled By Matrix # of bottles 5/12/12 16:40 KB W 6	Number of preserved bottles X X	LAB USE ONLY
Turnaround Time (Business days) <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available VIA Lablink	Approved By (Accutest PM): / Date: _____ _____ _____ _____ _____	Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other _____ Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary	Comments / Special Instructions _____ _____ _____ _____
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished By: 3 Relinquished By:	Date/Time: 5/14/12 1300 Received By: 1 Fedex	Relinquished By: 2 FSS	Date/Time: 5/15/12 Received By: 2
Relinquished By: 5	Date/Time: Received By: 5	Custody Seal # <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp 2.8

TC8540: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8540 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

<u>Cooler Security</u>		<u>Y</u>	<u>or</u>	<u>N</u>			<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	<u>Infrared Gun</u>		
3. Cooler media:	<u>Ice (Bag)</u>		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>			
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8540

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8540: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TC8540

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8540-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8540-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8540-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8540-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8540-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8540-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8540: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8540 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8540			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8540	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8540
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8540-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8540-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8540-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8540-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8540-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8540-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8540

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8540-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8541

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8541

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8541-1	05/12/12	13:30	05/15/12	AQ	Ground Water	WWW20-HUF-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8541

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 5:22:33 PM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8541. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW20-HUF-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8541-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017771.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	96%		87-119%
460-00-4	4-Bromofluorobenzene	95%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW20-HUF-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8541-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.357 a	0.0025	0.0015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00327	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.acculast.com

[illegible]

TC8541: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8541 **Client:** EARTHCON **Project:** FIRST QUARTERLY WELL SAMPLING PARKER
Date / Time Received: 5/15/2012 **Delivery Method:** FedEx **Airbill #'s:** 800040672089
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security **Y or N** **Y or N**
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature **Y or N**
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation **Y or N** **N/A** **WTB** **STB**
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation **Y or N**
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition **Y or N**
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions **Y or N** **N/A**
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8541

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8541: Chain of Custody
Page 3 of 4

Sample Receipt Log

 Job #: TC8541

 Date / Time Received: 5/15/2012

 Initials: BG

 Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8541-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8541-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8541-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8541-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8541-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8541-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8541: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8541 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8541			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8541	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8541
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8541-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8541-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8541-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8541-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8541-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8541-1

CAS No.	Compound	TC8541-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8541

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8541-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/23/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8542

Sampling Date: 05/13/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8542

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8542-1	05/13/12	18:40	05/15/12	AQ	Ground Water	WWW15-HUR-051312



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8542

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/23/2012 5:44:07 PM

1 Sample was collected on 05/13/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8542. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW15-HUR-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8542-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017772.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		79-122%
17060-07-0	1,2-Dichloroethane-D4	100%		75-121%
2037-26-5	Toluene-D8	99%		87-119%
460-00-4	4-Bromofluorobenzene	101%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW15-HUR-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8542-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002620.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002621.D	10	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	1.44 ^a	0.0050	0.0030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.136	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4709 FAX: 713-271-4770
www.acctest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job #	

TC8542

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes	
Company Name EarthCon Consultants, Inc.		Project Name First Quarterly Well Sampling, Parker County, Texas					
Street Address 4800 Sugar Grove Blvd., Suite 390		Street					
City State Zip Stafford TX 77477		City State					
Project Contact Gabriela Floreslovo		Project #		Billing Information (if different from Report to)			
Phone # 281-201-3513		Client Purchase Order #		Street Address			
Fax #		City State Zip					
Sample(s) Name(s) Kathleen Buxton 281-2405800		Project Manager		Attention:			
Phone #							
Field ID / Point of Collection		Collection		Number of preserved Bottles			
Date		Time		Sampled By			
Matrix		# of bottles		HCl			
HNO ₃		Zn(NO ₃) ₂		HNO ₃			
H ₂ SO ₄		HNO ₃		HNO ₃			
DI Water		MEDT		TSP			
NH ₄ SO ₄		ENCORE		OTHER			
BTEX 8260B		Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175					
LAB USE ONLY							

Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY		Approved By (Accutest PM): / Date:			
Emergency & Rush T/A data available VIA Lablink		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"		<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other	
		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary			

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	5/12/12	Fedex	2	5/12/12	
3		3	4		
5		5			

Custody Seal #	Intact	Not Intact	Preserved where applicable	On Ice	Cooler Temp
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	71.8

TC8542: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8542 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

<u>Cooler Security</u>		<u>Y</u>	<u>or</u>	<u>N</u>			<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>	

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	Infrared Gun		
3. Cooler media:	Ice (Bag)		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>	<u>WTB</u>	<u>STB</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>			
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>			

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8542

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8542: Chain of Custody
Page 3 of 4

Sample Receipt Log

Page 3 of 3

Job #: TC8542

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8542-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8542-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8542-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8542-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8542-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8542-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8542: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8542 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/23/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/23/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8542			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?						X	1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?						X	3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/23/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8542	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/23/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8542
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER# ¹	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8542-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8542-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8542-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8542-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8542-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8542-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits	
		ug/l	Q	ug/l	ug/l		%
74-82-8	Methane	357 ^b		21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U		57.4	46.1	80	60-140
74-84-0	Ethane	3.27		43.3	42.8	91	60-140
74-98-6	Propane	1.5 U		60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U		72.5	64.2	88	60-140
106-97-8	Butane	1.5 U		76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8542

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8542-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8543

Sampling Date: 05/13/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8543

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8543-1	05/13/12	17:30	05/15/12	AQ	Ground Water	WWW14A-HUR-051312

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8543

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 9:47:45 AM

1 Sample was collected on 05/13/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8543. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW14A-HUR-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8543-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017773.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	94%		87-119%
460-00-4	4-Bromofluorobenzene	99%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW14A-HUR-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8543-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002622.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002623.D	10	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	1.15 ^a	0.0050	0.0030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0963	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.aacrfest.com

[illegible]

TC8543: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8543 **Client:** EARTHCON **Project:** FIRST QUARTERLY WELL SAMPLING PARKER
Date / Time Received: 5/15/2012 **Delivery Method:** FedEx **Airbill #s:** 800040672089
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8543

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8543: Chain of Custody
Page 3 of 4

Sample Receipt Log

Page 3 of 3

Job #: TC8543

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8543-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8543-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8543-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8543-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8543-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8543-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8543: Chain of Custody

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Appendix A Laboratory Data Package Cover Page

TC8543 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8543			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?						X	1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?						X	3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8543	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8543
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8543-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8543-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8543-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8543-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8543-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8543-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8543

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8543-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8544

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8544

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8544-1	05/12/12	14:50	05/15/12	AQ	Ground Water	WWW05-WEL-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8544

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 9:56:57 AM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8544. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW05-WEL-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8544-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017774.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		79-122%
17060-07-0	1,2-Dichloroethane-D4	97%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	96%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW05-WEL-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8544-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002624.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2							

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.200	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00655	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accurtest.com

[illegible]

TC8544: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8544 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security
Y or N
Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature
Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared Gun | |
| 3. Cooler media: | Ice (Bag) | |

Quality Control Preservation
Y or N
N/A
WTB STB

- | | | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |

Sample Integrity - Documentation
Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition
Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions
Y or N
N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8544

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8544: Chain of Custody
Page 3 of 4

Sample Receipt Log

 Job #: TC8544

 Date / Time Received: 5/15/2012

 Initials: BG

 Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8544-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8544-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8544-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8544-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8544-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8544-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8544: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8544 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8544			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8544	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8544
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8544-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8544-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8544-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8544-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8544-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8544-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8544

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8544-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8545

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8545

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8545-1	05/12/12	16:20	05/15/12	AQ	Ground Water	WWW25-MAT-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8545

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 10:20:09 AM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8545. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW25-MAT-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8545-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017775.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	101%		87-119%
460-00-4	4-Bromofluorobenzene	98%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW25-MAT-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8545-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002625.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002626.D	5	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.460 a	0.0025	0.0015	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0273	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00375	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job #	

TC8545

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes
Company Name EarthCon Consultants, Inc.		Project Name First Quarterly Well Sampling, Parker County, Texas														DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED-Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank
Street Address 4800 Sugar Grove Blvd., Suite 390		Street														
City State Zip Stafford TX 77477		City State														
Project Contact Gabriela Floreslovo		Project #														
Phone # Fax # 281-201-3513		Client Purchase Order #														
Sample(s) Name(s) Kathleen Buxton 281-240-5200		Project Manager														
Phone #		Attention:														
Field ID / Point of Collection		Collection		Number of preserved Bottles												LAB USE ONLY
Date Time Sampled By Matrix # of bottles		HCl HNO ₃ H ₂ SO ₄ H ₂ O ₂ H ₂ CO ₃ H ₂ PO ₄ H ₂ PO ₃ H ₂ PO ₂ H ₂ PO ₁ H ₂ PO ₀ H ₂ PO ₋₁ H ₂ PO ₋₂ H ₂ PO ₋₃ H ₂ PO ₋₄ H ₂ PO ₋₅ H ₂ PO ₋₆ H ₂ PO ₋₇ H ₂ PO ₋₈ H ₂ PO ₋₉ H ₂ PO ₋₁₀ H ₂ PO ₋₁₁ H ₂ PO ₋₁₂ H ₂ PO ₋₁₃ H ₂ PO ₋₁₄ H ₂ PO ₋₁₅ H ₂ PO ₋₁₆ H ₂ PO ₋₁₇ H ₂ PO ₋₁₈ H ₂ PO ₋₁₉ H ₂ PO ₋₂₀ H ₂ PO ₋₂₁ H ₂ PO ₋₂₂ H ₂ PO ₋₂₃ H ₂ PO ₋₂₄ H ₂ PO ₋₂₅ H ₂ PO ₋₂₆ H ₂ PO ₋₂₇ H ₂ PO ₋₂₈ H ₂ PO ₋₂₉ H ₂ PO ₋₃₀ H ₂ PO ₋₃₁ H ₂ PO ₋₃₂ H ₂ PO ₋₃₃ H ₂ PO ₋₃₄ H ₂ PO ₋₃₅ H ₂ PO ₋₃₆ H ₂ PO ₋₃₇ H ₂ PO ₋₃₈ H ₂ PO ₋₃₉ H ₂ PO ₋₄₀ H ₂ PO ₋₄₁ H ₂ PO ₋₄₂ H ₂ PO ₋₄₃ H ₂ PO ₋₄₄ H ₂ PO ₋₄₅ H ₂ PO ₋₄₆ H ₂ PO ₋₄₇ H ₂ PO ₋₄₈ H ₂ PO ₋₄₉ H ₂ PO ₋₅₀ H ₂ PO ₋₅₁ H ₂ PO ₋₅₂ H ₂ PO ₋₅₃ H ₂ PO ₋₅₄ H ₂ PO ₋₅₅ H ₂ PO ₋₅₆ H ₂ PO ₋₅₇ H ₂ PO ₋₅₈ H ₂ PO ₋₅₉ H ₂ PO ₋₆₀ H ₂ PO ₋₆₁ H ₂ PO ₋₆₂ H ₂ PO ₋₆₃ H ₂ PO ₋₆₄ H ₂ PO ₋₆₅ H ₂ PO ₋₆₆ H ₂ PO ₋₆₇ H ₂ PO ₋₆₈ H ₂ PO ₋₆₉ H ₂ PO ₋₇₀ H ₂ PO ₋₇₁ H ₂ PO ₋₇₂ H ₂ PO ₋₇₃ H ₂ PO ₋₇₄ H ₂ PO ₋₇₅ H ₂ PO ₋₇₆ H ₂ PO ₋₇₇ H ₂ PO ₋₇₈ H ₂ PO ₋₇₉ H ₂ PO ₋₈₀ H ₂ PO ₋₈₁ H ₂ PO ₋₈₂ H ₂ PO ₋₈₃ H ₂ PO ₋₈₄ H ₂ PO ₋₈₅ H ₂ PO ₋₈₆ H ₂ PO ₋₈₇ H ₂ PO ₋₈₈ H ₂ PO ₋₈₉ H ₂ PO ₋₉₀ H ₂ PO ₋₉₁ H ₂ PO ₋₉₂ H ₂ PO ₋₉₃ H ₂ PO ₋₉₄ H ₂ PO ₋₉₅ H ₂ PO ₋₉₆ H ₂ PO ₋₉₇ H ₂ PO ₋₉₈ H ₂ PO ₋₉₉ H ₂ PO ₋₁₀₀ H ₂ PO ₋₁₀₁ H ₂ PO ₋₁₀₂ H ₂ PO ₋₁₀₃ H ₂ PO ₋₁₀₄ H ₂ PO ₋₁₀₅ H ₂ PO ₋₁₀₆ H ₂ PO ₋₁₀₇ H ₂ PO ₋₁₀₈ H ₂ PO ₋₁₀₉ H ₂ PO ₋₁₁₀ H ₂ PO ₋₁₁₁ H ₂ PO ₋₁₁₂ H ₂ PO ₋₁₁₃ H ₂ PO ₋₁₁₄ H ₂ PO ₋₁₁₅ H ₂ PO ₋₁₁₆ H ₂ PO ₋₁₁₇ H ₂ PO ₋₁₁₈ H ₂ PO ₋₁₁₉ H ₂ PO ₋₁₂₀ H ₂ PO ₋₁₂₁ H ₂ PO ₋₁₂₂ H ₂ PO ₋₁₂₃ H ₂ PO ₋₁₂₄ H ₂ PO ₋₁₂₅ H ₂ PO ₋₁₂₆ H ₂ PO ₋₁₂₇ H ₂ PO ₋₁₂₈ H ₂ PO ₋₁₂₉ H ₂ PO ₋₁₃₀ H ₂ PO ₋₁₃₁ H ₂ PO ₋₁₃₂ H ₂ PO ₋₁₃₃ H ₂ PO ₋₁₃₄ H ₂ PO ₋₁₃₅ H ₂ PO ₋₁₃₆ H ₂ PO ₋₁₃₇ H ₂ PO ₋₁₃₈ H ₂ PO ₋₁₃₉ H ₂ PO ₋₁₄₀ H ₂ PO ₋₁₄₁ H ₂ PO ₋₁₄₂ H ₂ PO ₋₁₄₃ H ₂ PO ₋₁₄₄ H ₂ PO ₋₁₄₅ H ₂ PO ₋₁₄₆ H ₂ PO ₋₁₄₇ H ₂ PO ₋₁₄₈ H ₂ PO ₋₁₄₉ H ₂ PO ₋₁₅₀ H ₂ PO ₋₁₅₁ H ₂ PO ₋₁₅₂ H ₂ PO ₋₁₅₃ H ₂ PO ₋₁₅₄ H ₂ PO ₋₁₅₅ H ₂ PO ₋₁₅₆ H ₂ PO ₋₁₅₇ H ₂ PO ₋₁₅₈ H ₂ PO ₋₁₅₉ H ₂ PO ₋₁₆₀ H ₂ PO ₋₁₆₁ H ₂ PO ₋₁₆₂ H ₂ PO ₋₁₆₃ H ₂ PO ₋₁₆₄ H ₂ PO ₋₁₆₅ H ₂ PO 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Accutest Job Number: TC8545 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8545

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8545: Chain of Custody**Page 3 of 4**

Sample Receipt Log

Page 3 of 3

Job #: TC8545

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8545-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8545-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8545-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8545-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8545-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8545-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8545: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8545 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8545			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8545	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8545
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8545-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8545-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8545-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8545-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8545-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8545-1

CAS No.	Compound	TC8541-1 ug/l	Spike Q	MS ug/l	MS %	Limits
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8545

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8545-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8546

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8546

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8546-1	05/12/12	13:05	05/15/12	AQ	Ground Water	WWW04-ABB-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8546

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 10:31:16 AM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8546. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW04-ABB-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8546-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017776.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		79-122%
17060-07-0	1,2-Dichloroethane-D4	99%		75-121%
2037-26-5	Toluene-D8	98%		87-119%
460-00-4	4-Bromofluorobenzene	97%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW04-ABB-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8546-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2							

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.140	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00804	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutesl.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

1C8546

[illegible]

TC8546: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8546 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security
Y or N
Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature
Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>Infrared Gun</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |

Quality Control Preservation
Y or N
N/A
WTB STB

- | | | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |

Sample Integrity - Documentation
Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition
Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions
Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8546

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8546: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TC8546

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8546-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8546-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8546-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8546-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8546-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8546-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8546: Chain of Custody

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Appendix A Laboratory Data Package Cover Page

TC8546 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8546			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?						X	1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?						X	1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?						X	3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8546	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8546
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8546-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8546-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8546-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8546-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8546-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8546-1

CAS No.	Compound	TC8541-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	357 ^b	21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U	57.4	46.1	80	60-140
74-84-0	Ethane	3.27	43.3	42.8	91	60-140
74-98-6	Propane	1.5 U	60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U	72.5	64.2	88	60-140
106-97-8	Butane	1.5 U	76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8546

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8546-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q RPD	Limits
74-82-8	Methane	140	0.184	199*	30
74-85-1	Ethene	1.0 U	ND	nc	30
74-84-0	Ethane	8.04	0.0100	200*	30
74-98-6	Propane	1.5 U	ND	nc	30
75-28-5	Isobutane	1.5 U	ND	nc	30
106-97-8	Butane	1.5 U	ND	nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8547

Sampling Date: 05/13/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8547

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8547-1	05/13/12	11:55	05/15/12	AQ	Ground Water	WWW06-THO-051312



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8547

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 11:45:02 AM

1 Sample was collected on 05/13/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8547. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW06-THO-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8547-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017777.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00032	0.0010	0.00026	mg/l	J
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	96%		87-119%
460-00-4	4-Bromofluorobenzene	97%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW06-THO-051312	Date Sampled:	05/13/12
Lab Sample ID:	TC8547-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002629.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002631.D	2	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.293 a	0.0010	0.00060	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0889	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4776
www.acctest.com

FED-EX Tracking #		Bottle Order Control #	
Accutest Quote #		Accutest Job #	

TC8547

Client / Reporting Information		Project Information		Requested Analyses												Matrix Codes					
Company Name EarthCon Consultants, Inc.		Project Name First Quarterly Well Sampling, Parker County, Texas		<div style="display: flex; align-items: center;"><div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 5px;">BTEX 0260B</div><div>Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175</div></div>												<div>DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank</div>					
Street Address 4800 Sugar Grove Blvd., Suite 390		Street																			
City State Zip Stafford TX 77477		City State Company Name																			
Project Contact Gabriela Floreslovo		Project #																			
Phone # Fax # 281-201-3513		Client Purchase Order #																			
Sampler(s) Name(s) KATHLEEN BUXTON		Project Manager 5200		Number of preserved bottles												LAB USE ONLY					
Field ID / Point of Collection 1 WNWOL-THO-051312		Date 5/13/12		Time 1155		Sampled By KB		Matrix W U X													
Turnaround Time (Business days)		Data Deliverable Information		Comments / Special Instructions																	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush T/A data available VIA Lablink		Approved By (Accutest PM) / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary												<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other					
Relinquished to Customer: 945																					
Relinquished By: 945		Date Time: 5/14/12		Received By: Fedex		Date Time: 5/15/12		Received By: 945													
Relinquished By: 3		Date Time:		Received By: 3		Date Time:		Received By: 4													
Relinquished By: 5		Date Time:		Received By: 5		Date Time:		Received By:													
Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Preserved where applicable <input type="checkbox"/>												On Ice <input checked="" type="checkbox"/>	Cooler Temp: 2.8				

TC8547: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8547 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8547

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8547: Chain of Custody

Page 3 of 4

Sample Receipt Log

Job #: TC8547

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8547-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8547-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8547-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8547-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8547-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8547-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8547: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8547 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8547			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8547	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8547
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER# ¹	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8547-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8547-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8547-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8547-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8547-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8547-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits	
		ug/l	Q	ug/l	ug/l		%
74-82-8	Methane	357 ^b		21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U		57.4	46.1	80	60-140
74-84-0	Ethane	3.27		43.3	42.8	91	60-140
74-98-6	Propane	1.5 U		60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U		72.5	64.2	88	60-140
106-97-8	Butane	1.5 U		76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8547

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8547-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8548

Sampling Date: 05/14/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8548

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
TC8548-1	05/14/12	09:40	05/15/12	AQ	Ground Water	WWW01-WEL-051412



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8548

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 11:59:38 AM

1 Sample was collected on 05/14/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8548. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW01-WEL-051412	Date Sampled:	05/14/12
Lab Sample ID:	TC8548-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017778.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	99%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW01-WEL-051412	Date Sampled:	05/14/12
Lab Sample ID:	TC8548-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002632.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002633.D	10	05/22/12	FI	n/a	n/a	GSS132

RSK147 Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	1.36 ^a	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.120	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form



CHAIN OF CUSTODY

PAGE ____ OF ____

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

TC8548

Client / Reporting Information		Project Information										Requested Analyses										Matrix Codes									
Company Name EarthCon Consultants, Inc.		Project Name: First Quarterly Well Sampling, Parker County, Texas										<div>BTEX 9260B Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175</div>										<div>DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank</div>									
Street Address 4800 Sugar Grove Blvd., Suite 390		Billing Information (If different from Report to)																													
City State Zip Stafford TX 77477		Company Name																													
Project Contact Gabriela Floreslova		Street Address																													
Phone # Fax # 281-201-3513		City State Zip																													
Samples (Name(s)) KATHLEEN BAXTON		Phone # 281-240-5200		Project Manager		Attention:								LAB USE ONLY																	
Field ID / Point of Collection 1. WNW01-WEL-051912		Date 5/14/12		Time 9:40		Sampled By KB		Matrix W		# of bottles 10		Number of preserved bottles <input checked="" type="checkbox"/> X																			
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions																			
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day EMERGENCY Emergency & Rush TIA data available via Lablink		Approved By (Accutest PM): / Date: _____ _____ _____ _____										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary										<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other _____									
Sample Custody must be documented below each time samples change possession, including courier delivery.																															
Relinquished By:		Date Time: 5/14/12 1300		Received By: 1 Fedex		Relinquished By: 2		Date Time: 5/15/12		Received By:		Relinquished By: 3		Date Time:		Received By:		Relinquished By: 4		Date Time:		Received By:									
Relinquished by:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Relinquished by:		Date Time:		Received By:		Relinquished by:		Date Time:		Received By:									
5				5		5				5		5				5		5				5									
Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		Preserved where applicable <input type="checkbox"/>		On Ice <input checked="" type="checkbox"/>		Cooler Temp 2.8																							

TC8548: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8548 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8548

CSR: Elessa SommersResponse Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8548: Chain of Custody**Page 3 of 4**

Sample Receipt Log

Job #: TC8548

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8548-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8548-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8548-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8548-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8548-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8548-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8548: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8548 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8548			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8548	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Pa	Laboratory Project Number:	TC8548
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER# ¹	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8548-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8548-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8548-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8548-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8548-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8548-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits	
		ug/l	Q	ug/l	ug/l		%
74-82-8	Methane	357 ^b		21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U		57.4	46.1	80	60-140
74-84-0	Ethane	3.27		43.3	42.8	91	60-140
74-98-6	Propane	1.5 U		60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U		72.5	64.2	88	60-140
106-97-8	Butane	1.5 U		76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8548

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8548-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8549

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8549

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8549-1	05/12/12	11:05	05/15/12	AQ	Ground Water	WWW13-STR-051212

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8549

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 12:12:53 PM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8549. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS132

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8541-1MS, TC8546-1DUP were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for Duplicate for Ethane, Methane are outside control limits for sample TC8546-1DUP.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW13-STR-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8549-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017779.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00028	0.0010	0.00026	mg/l	J
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		79-122%
17060-07-0	1,2-Dichloroethane-D4	99%		75-121%
2037-26-5	Toluene-D8	97%		87-119%
460-00-4	4-Bromofluorobenzene	95%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW13-STR-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8549-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002634.D	1	05/22/12	FI	n/a	n/a	GSS132
Run #2	SS002635.D	20	05/22/12	FI	n/a	n/a	GSS132

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	2.65 ^a	0.010	0.0060	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.419	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

ACCUTEST LABORATORIES		10165 Harwin Dr, Ste 150 Houston, TX 77036 TEL: 713-271-4700 FAX: 713-271-4770 www.accutest.com		FED-EX Tracking # _____ Accutest Quote # _____		Bottle Order Control # _____ Accutest Job # _____		T 8549			
Client / Reporting Information		Project Information		Requested Analyses						Matrix Codes	
Company Name EarthCon Consultants, Inc.		Project Name: First Quarterly Well Sampling, Parker County, Texas		BTX 8260B Butane, Ethane, Ethene, Isobutane, Methane, Propane by RSK-175						DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank	
Street Address 4800 Sugar Grove Blvd., Suite 390		Street _____									
City State Zip Stafford TX 77477		City State _____									
Project Contact Gabriela Floreslovo		Project # _____									
Phone # 281-201-3513		Client Purchase Order # _____									
E-mail kathleen.burton@earthcon.com		Street Address _____		City _____		State _____		Zip _____			
Attention: Kathleen Burton		Attention: _____		City _____		State _____		Zip _____			
Sample(s) Name(s) WWWW13-STR-051212		Project Manager 281-240-5220		Attention: _____		City _____		State _____			
Field ID / Point of Collection 1, WWW13-STR-051212		Date 5/12/12		Time 11:05		Sampled By KB		Matrix W			
Number of bottles 6		HCl X		NaOH X		ZINC/CH X		HNO3 X			
H2SO4 X		DI Water X		MEOH X		TSP X		NaHCO3 X			
ENCORE X		OTHER X		LAB USE ONLY		LAB USE ONLY		LAB USE ONLY			
Turnaround Time (Business days) Standard		Approved By (Accutest PM): / Date: _____		Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"		<input checked="" type="checkbox"/> TRRP <input type="checkbox"/> EDD Format <input type="checkbox"/> Other _____		Comments / Special Instructions _____			
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial "C" = Results + QC & Surrogate Summary		Sample Custody must be documented below each time samples change possession, including courier delivery.		Relinquished By: 2 fce JS		Date Time: 5/15/12			
Relinquished By Sampler: 3		Date Time: 5/11/12 1300		Received By: 1 Fedex		Relinquished By: 2 fce JS		Date Time: 5/15/12			
Relinquished By Sampler: 3		Date Time: _____		Received By: 3		Relinquished By: 4		Date Time: _____			
Relinquished By: 5		Date Time: _____		Received By: 5		Custody Seal # <input type="checkbox"/> Intact <input type="checkbox"/> Not Intact		Preserved where applicable <input type="checkbox"/> On Ice <input checked="" type="checkbox"/> Cooler Temp			

TC8549: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8549 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #'s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments: Trip blank is reported in job TC8536.

Accutest Job Number: TC8549

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8549: Chain of Custody
Page 3 of 4

Sample Receipt Log

Page 3 of 3

Job #: TC8549

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8549-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8549-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8549-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8549-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8549-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8549-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8549: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8549 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ [] _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8549			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS132, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?					X		1
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8549	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS132, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSS?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8549
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS132, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8549-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8549-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-MB	SS002610.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8549-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS132-BS	SS002611.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8549-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.9	97	70-130
74-85-1	Ethene	57.4	60.1	105	70-130
74-84-0	Ethane	43.3	43.5	100	70-130
74-98-6	Propane	60.6	60.3	100	70-130
75-28-5	Isobutane	72.5	70.2	97	70-130
106-97-8	Butane	76.6	69.0	90	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8541-1MS	SS002618.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002616.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8541-1	SS002617.D	5	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8549-1

CAS No.	Compound	TC8541-1	Spike	MS	MS	Limits	
		ug/l	Q	ug/l	ug/l		%
74-82-8	Methane	357 ^b		21.5	487	605* ^a	60-140
74-85-1	Ethene	1.0 U		57.4	46.1	80	60-140
74-84-0	Ethane	3.27		43.3	42.8	91	60-140
74-98-6	Propane	1.5 U		60.6	54.6	90	60-140
75-28-5	Isobutane	1.5 U		72.5	64.2	88	60-140
106-97-8	Butane	1.5 U		76.6	62.0	81	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

Duplicate Summary

Page 1 of 1

Job Number: TC8549

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8546-1DUP	SS002628.D	1	05/22/12	FI	n/a	n/a	GSS132
TC8546-1	SS002627.D	1	05/22/12	FI	n/a	n/a	GSS132

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8549-1

CAS No.	Compound	TC8546-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	140	0.184		199*	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	8.04	0.0100		200*	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8550

Sampling Date: 05/12/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8550

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
TC8550-1	05/12/12	11:20	05/15/12	AQ Ground Water	WWW22-SIM-051212



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8550

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 3:33:34 PM

1 Sample was collected on 05/12/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8550. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS134

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8551-1DUP, TC8767-2MS were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW22-SIM-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8550-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017780.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		79-122%
17060-07-0	1,2-Dichloroethane-D4	100%		75-121%
2037-26-5	Toluene-D8	96%		87-119%
460-00-4	4-Bromofluorobenzene	97%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW22-SIM-051212	Date Sampled:	05/12/12
Lab Sample ID:	TC8550-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002672.D	1	05/24/12	FI	n/a	n/a	GSS134
Run #2	SS002674.D	10	05/24/12	FI	n/a	n/a	GSS134

RSK147 Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.612 ^a	0.0050	0.0030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.0433	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

(a) Result is from Run# 2

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

Accutest Job Number: TC8550 Client: EARTHCON Project: FIRST QUARTERLY WELL SAMPLING PARKER
 Date / Time Received: 5/15/2012 Delivery Method: FedEx Airbill #s: 800040672089
 No. Coolers: 1 Therm ID: IRGUN5 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security Y or N Y or N
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature Y or N
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (Bag)

Quality Control Preservation Y or N N/A WTB STB
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation Y or N
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition Y or N
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions Y or N N/A
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments Trip blank is reported in job TC8536.

Accutest Job Number: TC8550

CSR: Elessa Sommers

Response Date: 5/16/2012

Response: Trip blank is reported in job TC8536.

4.1

4

TC8550: Chain of Custody
Page 3 of 4

Sample Receipt Log

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Job #: TC8550

Date / Time Received: 5/15/2012

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8550-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8550-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8550-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8550-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8550-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8550-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8550: Chain of Custody

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Appendix A Laboratory Data Package Cover Page

TC8550 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8550			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS134, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8550	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS134, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB<MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8550
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS134, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8550-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8550-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8550-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS134-MB	SS002670.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8550-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Job Number: TC8550
Account: PESTXST EarthCon Consultants
Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS134-BS	SS002671.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples: Method: RSKSOP-147/175

TC8550-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.6	96	70-130
74-85-1	Ethene	57.4	63.5	111	70-130
74-84-0	Ethane	43.3	45.2	104	70-130
74-98-6	Propane	60.6	61.0	101	70-130
75-28-5	Isobutane	72.5	73.1	101	70-130
106-97-8	Butane	76.6	79.2	103	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8767-2MS	SS002679.D	1	05/24/12	FI	n/a	n/a	GSS134
TC8767-2	SS002678.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8550-1

CAS No.	Compound	TC8767-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	65.5	21.5	42.1	-109* a	60-140
74-85-1	Ethene	ND	57.4	45.4	79	60-140
74-84-0	Ethane	ND	43.3	34.8	80	60-140
74-98-6	Propane	ND	60.6	49.4	81	60-140
75-28-5	Isobutane	ND	72.5	54.6	75	60-140
106-97-8	Butane	ND	76.6	58.7	77	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

Duplicate Summary

Page 1 of 1

Job Number: TC8550

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8551-1DUP	SS002676.D	1	05/24/12	FI	n/a	n/a	GSS134
TC8551-1	SS002675.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8550-1

CAS No.	Compound	TC8551-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	18.4	14.6		23	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	5.81	5.40		7	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30



05/24/12

Technical Report for

EarthCon Consultants

First Quarterly Well Sampling, Parker County, Texas

Accutest Job Number: TC8551

Sampling Date: 05/14/12

Report to:

EarthCon Consultants
4800 Sugar Grove Suite 420
Stafford, TX 77477
gfloreslovo@earthcon.com; djackson@jacksonsjoberg.com;
mcpatton@rangeresources.com; escott@earthcon.com;
ATTN: Gabriela Floreslovo

Total number of pages in report: **25**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

Paul Canevaro
Laboratory Director

Client Service contact: Elessa Sommers 713-271-4700

Certifications: TX (T104704220-12-7) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

EarthCon Consultants

Job No: TC8551

First Quarterly Well Sampling, Parker County, Texas

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
TC8551-1	05/14/12	11:10	05/15/12	AQ	Ground Water	WWW24-SMI-051412



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: EarthCon Consultants

Job No TC8551

Site: First Quarterly Well Sampling, Parker County, Texas

Report Date 5/24/2012 3:43:35 PM

1 Sample was collected on 05/14/2012 and received intact at Accutest on 05/15/2012 and properly preserved in 1 cooler at 2.8 Deg C. The sample received an Accutest job number of TC8551. A listing of the Laboratory Sample ID, Client Sample ID and date of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ

Batch ID: VE812

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8215-7MS, TC8215-7MSD were used as the QC samples indicated.

Volatiles by GC By Method RSKSOP-147/175

Matrix AQ

Batch ID: GSS134

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TC8551-1DUP, TC8767-2MS were used as the QC samples indicated.
- Matrix Spike Recovery for Methane is outside control limits. Outside control limits due to high level in sample relative to spike amount.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WWW24-SMI-051412	Date Sampled:	05/14/12
Lab Sample ID:	TC8551-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	First Quarterly Well Sampling, Parker County, Texas		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E0017781.D	1	05/17/12	MH	n/a	n/a	VE812
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MQL	SDL	Units	Q
71-43-2	Benzene	0.00025 U	0.0010	0.00025	mg/l	
108-88-3	Toluene	0.00026 U	0.0010	0.00026	mg/l	
100-41-4	Ethylbenzene	0.00025 U	0.0010	0.00025	mg/l	
1330-20-7	Xylene (total)	0.00071 U	0.0030	0.00071	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	95%		87-119%
460-00-4	4-Bromofluorobenzene	96%		80-133%

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WWW24-SMI-051412	Date Sampled:	05/14/12
Lab Sample ID:	TC8551-1	Date Received:	05/15/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	RSKSOP-147/175		
Project:	First Quarterly Well Sampling, Parker County, Texas		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	SS002675.D	1	05/24/12	FI	n/a	n/a	GSS134
Run #2							

RSK147 Special List

CAS No.	Compound	Result	MQL	SDL	Units	Q
74-82-8	Methane	0.0184	0.00050	0.00030	mg/l	
74-85-1	Ethene	0.00050 U	0.0010	0.00050	mg/l	
74-84-0	Ethane	0.00581	0.0010	0.00050	mg/l	
74-98-6	Propane	0.00075 U	0.0015	0.00075	mg/l	
75-28-5	Isobutane	0.00075 U	0.0015	0.00075	mg/l	
106-97-8	Butane	0.00075 U	0.0015	0.00075	mg/l	

U = Not detected SDL - Sample Detection Limit
MQL = Method Quantitation Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- LRC Form

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.aacvhest.com

[illegible]

TC8551: Chain of Custody

Page 1 of 4

Accutest Job Number: TC8551 **Client:** EARTHCON **Project:** FIRST QUARTERLY WELL SAMPLING PARKER
Date / Time Received: 5/15/2012 **Delivery Method:** FedEx **Airbill #s:** 800040672089
No. Coolers: 1 **Therm ID:** IRGUN5 **Temp Adjustment Factor:** -0.5
Cooler Temps (Initial/Adjusted): #1: (3.3/2.8)

Cooler Security **Y or N** **Y or N**
 1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☐ ☒

Cooler Temperature **Y or N**
 1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Infrared Gun
 3. Cooler media: Ice (bag)

Quality Control Preservation **Y or N** **N/A** **WTB** **STB**
 1. Trip Blank present / cooler: ☒ ☐ ☐ ☒ ☐
 2. Trip Blank listed on COC: ☐ ☒ ☐
 3. Samples preserved properly: ☒ ☐
 4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation **Y or N**
 1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☐ ☒

Sample Integrity - Condition **Y or N**
 1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions **Y or N** **N/A**
 1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments TIME ON VIALS IS 11:10 SAME DATE AS C.O.C.
 Trip blank is reported in job TC8536.

Accutest Job Number: TC8551**CSR:** Elessa Sommers**Response Date:** 5/16/2012

Response: The collection time was not recorded on the chain-of-custody. Collection time was obtained from the container labels.
Trip blank is reported in job TC8536.

4.1
4

TC8551: Chain of Custody
Page 3 of 4

Sample Receipt Log

Job #: TC8551

Date / Time Received: 5/15/2012 9:45:00 AM

Initials: BG

Client: EARTHCON

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	TC8551-1	40ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8551-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8551-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8551-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8551-1	40ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8
1	TC8551-1	40ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IRGUN5	3.3	-0.5	2.8

TC8551: Chain of Custody

Page 4 of 4

Appendix A Laboratory Data Package Cover Page

TC8551 This data package consists of

- ☐ This signature page, the laboratory review checklist, and the following reportable data:
- ☐ R1 Field chain-of-custody documentation;
- ☐ R2 Sample identification cross-reference;
- ☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- ☐ R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- ☐ R5 Test reports/summary forms for blank samples;
- ☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- ☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
- ☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) The amount of analyte measured in the duplicate,
 - b) The calculated RPD, and
 - c) The laboratory's QC limits for analytical duplicates.
- ☐ R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each
- ☐ R10 Other problems or anomalies.


The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Report. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld.

Check, if applicable: This laboratory meets an exception under 30 TAC&25.6 and was last inspection by

☐ [X] TCEQ or ☐ _____ on April 2011. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

QA Manager

Name (Printed)	Signature	Official Title (printed)	Date
Paul Canevaro		Laboratory Director	5/24/2012

LABORATORY REVIEW CHECKLIST: REPORTABLE DATA									
Laboratory Name:		Accutest Gulf Coast		LRC Date:		5/24/2012			
Project Name:		First Quarterly Well Sampling, Parker County, Texas		Laboratory Project Number:		TC8551			
Reviewer Name:		Elessa Sommers		Prep Batch Number(s):		GSS134, VE812			
# ¹	A ²	DESCRIPTION				YES	NO	NA ³	NR ⁴ ER # ⁵
R1	OI	CHAIN-OF-CUSTODY (C-O-C):							
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?				X			
		Were all departures from standard conditions described in an exception report?				X			
R2	OI	Sample and quality control (QC) identification							
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?				X			
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?				X			
R3	OI	Test reports							
		Were samples prepared and analyzed within holding times?				X			
		Other than those results <MQL, were all other raw values bracketed by calibration standards?				X			
		Were calculations checked by a peer or supervisor?				X			
		Were all analyte identifications checked by a peer or supervisor?				X			
		Were sample detection limits reported for all analytes not detected?				X			
		Were all results for soil and sediment samples reported on a dry weight basis?						X	
		Were % moisture (or solids) reported for all soil and sediment samples?						X	
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?						X	
		If required for the project, are TIC's reported?						X	
R4	O	Surrogate recovery data							
		Were surrogates added prior to extraction?				X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?				X			
R5	OI	Test reports/summary forms for blank samples							
		Were appropriate type(s) of blanks analyzed?				X			
		Were blanks analyzed at the appropriate frequency?				X			
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?				X			
		Were blank concentrations <MQL?				X			
R6	OI	Laboratory control samples (LCS):							
		Were all COCs included in the LCS?				X			
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?				X			
		Were LCSs analyzed at required frequency?				X			
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?				X			
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?				X			2
		Was the LCSD RPD within QC limits?						X	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data							
		Were the project/method specified analytes included in the MS and MSD?				X			
		Were MS/MSD analyzed at the appropriate frequency?				X			
		Were MS (and MSD, if applicable) %Rs within the laboratory QC Limits?					X		1
		Were the MS/MSD RPDs within laboratory QC limits?				X			
R8	OI	Analytical duplicate data							
		Were appropriate analytical duplicates analyzed for each matrix?				X			
		Were analytical duplicates analyzed at the appropriate frequency?				X			
		Were RPDs or relative standard deviations within the laboratory QC limits?				X			
R9	OI	Method quantitation limits (MQLs):							
		Are the MQLs for each method analyte included in the laboratory data package?				X			
		Do the MQLs correspond to the concentration of the lowest non-zero calibration				X			
		Are unadjusted MQLs and DCSs included in the laboratory data package?					X		3
R10	OI	Other problems/anomalies							
		Are all known problems/anomalies/special conditions noted in this LRC and ER?				X			
		Was applicable and available technology used to lower the SDL to minimize the				X			
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?				X			

Laboratory Name:		Accutest Gulf Coast	LRC Date:		5/24/2012	
Project Name:		First Quarterly Well Sampling, Pa	Laboratory Project Number:		TC8551	
Reviewer Name:		Elessa Sommers	Prep Batch Number(s):		GSS134, VE812	
# ¹	A ²	DESCRIPTION	YES	NO	NA ³	NR ⁴ ER # ⁵
S1	OI	Initial calibration (ICAL)				
		Were response factors and/or relative response factors for each analyte within QC limits?	X			
		Were percent RSDs or correlation coefficient criteria met?	X			
		Was the number of standards recommended in the method used for all analytes?	X			
		Were all points generated between the lowest and highest standard used to calculate the curve?	X			
		Are ICAL data available for all instruments used?	X			
		Has the initial calibration curve been verified using an appropriate second source standard?	X			
S2	OI	Initial and continuing calibration verification (ICCV AND CCV) and continuing				
		Was the CCV analyzed at the method-required frequency?	X			
		Were percent differences for each analyte within the method-required QC limits?	X			
		Was the ICAL curve verified for each analyte?	X			
		Was the absolute value of the analyte concentration in the inorganic CCB-MDL?			X	
S3	O	Mass spectral tuning				
		Was the appropriate compound for the method used for tuning?	X			
		Were ion abundance data within the method-required QC limits?	X			
S4	O	Internal standards (IS)				
		Were IS area counts and retention times within the method-required QC limits?	X			
S5	OI	Raw data (NELAC Section 5.5.10)				
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X			
		Were data associated with manual integrations flagged on the raw data?	X			
S6	O	Dual column confirmation				
		Did dual column confirmation results meet the method-required QC?			X	
S7	O	Tentatively identified compounds (TICs):				
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X	
S8	I	Interference Check Sample (ICS) results				
		Were percent recoveries within method QC limits?			X	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions				
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X	
S10	OI	Method detection limit (MDL) studies				
		Was a MDL study performed for each reported analyte?	X			
		Is the MDL either adjusted or supported by the analysis of DCSSs?	X			2
S11	OI	Proficiency test reports				
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X			
S12	OI	Standards documentation				
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate source?	X			
S13	OI	Compound/analyte identification procedures				
		Are the procedures for compound/analyte identification documented?	X			
S14	OI	Demonstration of analyst competency (DOC)				
		Was DOC conducted consistent with NELAC Chapter 5?	X			
		Is documentation of the analyst's competency up-to-date and on file?	X			
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)				
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X			
S16	OI	Laboratory standard operating procedures (SOPs)				
		Are laboratory SOPs current and on file for each method performed?	X			

LABORATORY REVIEW CHECKLIST (continued): Exception Reports			
Laboratory Name:	Accutest Gulf Coast	LRC Date:	5/24/2012
Project Name:	First Quarterly Well Sampling, Phase 1	Laboratory Project Number:	TC8551
Reviewer Name:	Elessa Sommers	Prep Batch Number(s):	GSS134, VE812
ER#	Description		
1	All anomalies are discussed in the case narrative.		
2	The Laboratory does not perform DCS analysis for Method RSKSOP-147/175. The compounds reported are not listed or do not have values in the Texas TRRP PCL tables.		
3	For reporting purposes, the method blank represents the unadjusted MQL. The DCS is on file in the laboratory and is not included in the laboratory data package.		
4	For reporting purposes, the MQL is defined in the report as the RL. The unadjusted MQL/RL is reported in the method blank. The SDL is defined in the report as the MDL.		

1ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-MB	E0017766.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8551-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 79-122%
17060-07-0	1,2-Dichloroethane-D4	101% 75-121%
2037-26-5	Toluene-D8	99% 87-119%
460-00-4	4-Bromofluorobenzene	97% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE812-BS	E0017764.D	1	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8551-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.4	98	76-118
100-41-4	Ethylbenzene	25	24.7	99	75-112
108-88-3	Toluene	25	23.7	95	77-114
1330-20-7	Xylene (total)	75	72.4	97	75-111

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	103%	75-121%
2037-26-5	Toluene-D8	100%	87-119%
460-00-4	4-Bromofluorobenzene	97%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8215-7MS	E0017783.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7MSD	E0017784.D	10	05/17/12	MH	n/a	n/a	VE812
TC8215-7	E0017782.D	10	05/17/12	MH	n/a	n/a	VE812

The QC reported here applies to the following samples:

Method: SW846 8260B

TC8551-1

CAS No.	Compound	TC8215-7 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1030	250	1260	92	1280	100	2	76-118/16
100-41-4	Ethylbenzene	26.7	250	272	98	267	96	2	75-112/12
108-88-3	Toluene	ND	250	246	98	240	96	2	77-114/12
1330-20-7	Xylene (total)	70.6	750	809	98	794	96	2	75-111/12

CAS No.	Surrogate Recoveries	MS	MSD	TC8215-7	Limits
1868-53-7	Dibromofluoromethane	92%	94%	92%	79-122%
17060-07-0	1,2-Dichloroethane-D4	98%	100%	99%	75-121%
2037-26-5	Toluene-D8	98%	97%	96%	87-119%
460-00-4	4-Bromofluorobenzene	99%	95%	98%	80-133%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS134-MB	SS002670.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8551-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.30	ug/l	
74-85-1	Ethene	ND	1.0	0.50	ug/l	
74-84-0	Ethane	ND	1.0	0.50	ug/l	
74-98-6	Propane	ND	1.5	0.75	ug/l	
75-28-5	Isobutane	ND	1.5	0.75	ug/l	
106-97-8	Butane	ND	1.5	0.75	ug/l	

Blank Spike Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GSS134-BS	SS002671.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8551-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
74-82-8	Methane	21.5	20.6	96	70-130
74-85-1	Ethene	57.4	63.5	111	70-130
74-84-0	Ethane	43.3	45.2	104	70-130
74-98-6	Propane	60.6	61.0	101	70-130
75-28-5	Isobutane	72.5	73.1	101	70-130
106-97-8	Butane	76.6	79.2	103	70-130

Matrix Spike Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8767-2MS	SS002679.D	1	05/24/12	FI	n/a	n/a	GSS134
TC8767-2	SS002678.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RKSOP-147/175

TC8551-1

CAS No.	Compound	TC8767-2 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	65.5	21.5	42.1	-109* a	60-140
74-85-1	Ethene	ND	57.4	45.4	79	60-140
74-84-0	Ethane	ND	43.3	34.8	80	60-140
74-98-6	Propane	ND	60.6	49.4	81	60-140
75-28-5	Isobutane	ND	72.5	54.6	75	60-140
106-97-8	Butane	ND	76.6	58.7	77	60-140

(a) Outside control limits due to high level in sample relative to spike amount.

Duplicate Summary

Page 1 of 1

Job Number: TC8551

Account: PESTXST EarthCon Consultants

Project: First Quarterly Well Sampling, Parker County, Texas

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
TC8551-1DUP	SS002676.D	1	05/24/12	FI	n/a	n/a	GSS134
TC8551-1	SS002675.D	1	05/24/12	FI	n/a	n/a	GSS134

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

TC8551-1

CAS No.	Compound	TC8551-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	18.4	14.6		23	30
74-85-1	Ethene	1.0 U	ND		nc	30
74-84-0	Ethane	5.81	5.40		7	30
74-98-6	Propane	1.5 U	ND		nc	30
75-28-5	Isobutane	1.5 U	ND		nc	30
106-97-8	Butane	1.5 U	ND		nc	30

Lab #: 249310 Job #: 18314
 Sample Name/Number: WWW11-AND-051112
 Company: Oil Tracers, LLC
 Date Sampled: 5/11/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.049			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.84			
Oxygen -----	8.62			
Nitrogen -----	89.10			
Carbon Dioxide -----	0.33			
Methane -----	0.0602			
Ethane -----	0.0009			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 1 Specific gravity, calculated: 0.988

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249311 Job #: 18314
 Sample Name/Number: WWW23-HUS-051112
 Company: Oil Tracers, LLC
 Date Sampled: 5/11/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.046			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.90			
Oxygen -----	7.33			
Nitrogen -----	90.22			
Carbon Dioxide -----	0.24			
Methane -----	0.264			
Ethane -----	0.0038			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 3 Specific gravity, calculated: 0.985

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.77

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249312 Job #: 18314
 Sample Name/Number: WWW02-PER-051112
 Company: Oil Tracers, LLC
 Date Sampled: 5/11/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.072			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.675			
Oxygen -----	4.51			
Nitrogen -----	29.21			
Carbon Dioxide -----	0.30			
Methane -----	61.11	-49.93	-187.2	
Ethane -----	4.10	-32.03		
Ethylene -----	0.0003			
Propane -----	0.0183			
Propylene -----	nd			
Iso-butane -----	0.0046			
N-butane -----	0.0013			
Iso-pentane -----	0.0010			
N-pentane -----	nd			
Hexanes + -----	0.0010			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 693

Specific gravity, calculated: 0.728

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249313 Job #: 18314
 Sample Name/Number: WWW09-STI-051112
 Company: Oil Tracers, LLC
 Date Sampled: 5/11/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.714			
Oxygen -----	0.056			
Nitrogen -----	29.81			
Carbon Dioxide -----	0.35			
Methane -----	63.00	-46.65	-186.0	
Ethane -----	4.52	-33.51		
Ethylene -----	nd			
Propane -----	1.18	-29.71		
Propylene -----	nd			
Iso-butane -----	0.127			
N-butane -----	0.187			
Iso-pentane -----	0.0301			
N-pentane -----	0.0166			
Hexanes + -----	0.0095			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 761

Specific gravity, calculated: 0.726

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.66

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249314 Job #: 18314
 Sample Name/Number: WWW07-MER-051112
 Company: Oil Tracers, LLC
 Date Sampled: 5/11/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.025			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.61			
Oxygen -----	0.083			
Nitrogen -----	82.97			
Carbon Dioxide -----	0.20			
Methane -----	14.90	-43.45	-143.0	
Ethane -----	0.210	-16.1		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0008			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0008			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 155

Specific gravity, calculated: 0.914

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.76

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249315 Job #: 18314
 Sample Name/Number: WWW13-STR-051212
 Company: Oil Tracers, LLC
 Date Sampled: 5/12/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.034			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.20			
Oxygen -----	0.038			
Nitrogen -----	59.94			
Carbon Dioxide -----	0.30			
Methane -----	36.60	-45.94	-178.3	
Ethane -----	1.89	-32.04		
Ethylene -----	nd			
Propane -----	0.0003			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0009			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0006			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 404

Specific gravity, calculated: 0.824

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.68

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249316 Job #: 18314
 Sample Name/Number: WWW22-SIM-051212
 Company: Oil Tracers, LLC
 Date Sampled: 5/12/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.54			
Oxygen -----	0.096			
Nitrogen -----	78.18			
Carbon Dioxide -----	0.19			
Methane -----	19.54	-44.24	-151.7	
Ethane -----	0.458	-23.4		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0003			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 206

Specific gravity, calculated: 0.894

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.71

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249317 Job #: 18314
 Sample Name/Number: WWW04-ABB-051212
 Company: Oil Tracers, LLC
 Date Sampled: 5/12/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.73			
Oxygen -----	0.084			
Nitrogen -----	89.68			
Carbon Dioxide -----	0.16			
Methane -----	8.21	-44.40	-112.0	
Ethane -----	0.136	-23.6		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0011			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 86

Specific gravity, calculated: 0.942

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249318 Job #: 18314
 Sample Name/Number: WWW05-WEL-051212
 Company: Oil Tracers, LLC
 Date Sampled: 5/12/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.87			
Oxygen -----	0.13			
Nitrogen -----	92.13			
Carbon Dioxide -----	0.22			
Methane -----	5.60	-44.28	-103.1	
Ethane -----	0.0542			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0008			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 58

Specific gravity, calculated: 0.953

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249319 Job #: 18314
 Sample Name/Number: WWW25-MAT-051212
 Company: Oil Tracers, LLC
 Date Sampled: 5/12/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.60			
Oxygen -----	0.11			
Nitrogen -----	84.13			
Carbon Dioxide -----	0.15			
Methane -----	13.71	-44.51	-133.0	
Ethane -----	0.263	-27.2		
Ethylene -----	nd			
Propane -----	0.0307			
Propylene -----	nd			
Iso-butane -----	0.0039			
N-butane -----	0.0053			
Iso-pentane -----	0.0007			
N-pentane -----	nd			
Hexanes + -----	0.0007			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 145

Specific gravity, calculated: 0.919

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.72

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249320 Job #: 18314
 Sample Name/Number: WWW06-THO-051312
 Company: Oil Tracers, LLC
 Date Sampled: 5/13/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.73			
Oxygen -----	0.095			
Nitrogen -----	86.39			
Carbon Dioxide -----	0.28			
Methane -----	11.37	-42.16	-131.8	
Ethane -----	0.134	-16.0		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 117

Specific gravity, calculated: 0.929

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.77

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249321 Job #: 18314
 Sample Name/Number: WWW21-VAN-051312
 Company: Oil Tracers, LLC
 Date Sampled: 5/13/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.83			
Oxygen -----	5.74			
Nitrogen -----	89.50			
Carbon Dioxide -----	1.05			
Methane -----	1.85	-17.4	90	
Ethane -----	0.0252			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 19

Specific gravity, calculated: 0.981

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.79

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Isotopes obtained online via GC-C/P-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249322 Job #: 18314
 Sample Name/Number: WWW19-WIL-051312
 Company: Oil Tracers, LLC
 Date Sampled: 5/13/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.41			
Oxygen -----	0.042			
Nitrogen -----	71.34			
Carbon Dioxide -----	0.23			
Methane -----	26.33	-43.85	-160.9	
Ethane -----	0.650	-20.5		
Ethylene -----	nd			
Propane -----	0.0004			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0008			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 278

Specific gravity, calculated: 0.866

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249323 Job #: 18314
 Sample Name/Number: WWW14A-HUR-051312
 Company: Oil Tracers, LLC
 Date Sampled: 5/13/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.61			
Oxygen -----	0.086			
Nitrogen -----	80.47			
Carbon Dioxide -----	0.47			
Methane -----	16.89	-43.84	-150.6	
Ethane -----	0.479	-27.5		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 180

Specific gravity, calculated: 0.907

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.75

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249324 Job #: 18314
 Sample Name/Number: WWW15-HUR-051312
 Company: Oil Tracers, LLC
 Date Sampled: 5/13/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.50			
Oxygen -----	0.076			
Nitrogen -----	73.86			
Carbon Dioxide -----	0.23			
Methane -----	23.50	-46.14	-156.8	
Ethane -----	0.834	-30.1		
Ethylene -----	nd			
Propane -----	0.0008			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0016			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 253

Specific gravity, calculated: 0.878

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.74

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249325 Job #: 18314
 Sample Name/Number: WWW01-WEL-051412
 Company: Oil Tracers, LLC
 Date Sampled: 5/14/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.59			
Oxygen -----	0.069			
Nitrogen -----	79.00			
Carbon Dioxide -----	0.33			
Methane -----	18.47	-46.24	-178.2	
Ethane -----	0.541	-20.5		
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	0.0004			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 197

Specific gravity, calculated: 0.900

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.76

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Ethane isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

Lab #: 249326 Job #: 18314
 Sample Name/Number: WWW24-SMI-051412
 Company: Oil Tracers, LLC
 Date Sampled: 5/14/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: First Quarterly Well Sampling
 Location: Parker County, TX
 Formation/Depth:
 Sampling Point:
 Date Received: 5/25/2012 Date Reported: 7/02/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	0.13			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.68			
Oxygen -----	15.61			
Nitrogen -----	81.72			
Carbon Dioxide -----	0.39			
Methane -----	0.455			
Ethane -----	0.0143			
Ethylene -----	nd			
Propane -----	0.0004			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.73psia, calculated: 5 Specific gravity, calculated: 0.996

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.78

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.